STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT BOOK

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 062006-008 Project Number: 2006-01-095

Owner: Johnson Controls Battery Group, Inc.

Owner's Address: P.O. Box 591, Milwaukee, WI 53201-0591

Installation Name: Johnson Controls Battery Group, Inc.

Installation Address: 4722 Pear Street, Saint Joseph, MO 64502

Location Information: Buchanan County, S25, T57N, R35W

Application for Authority to Construct was made for:

Construction of one (1) additional Chemset Curing Chamber and modification to the existing four (4) Chemset Curing Chambers. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required.*

☐ Standard Conditions (on reverse) are applicable to this permit.

☑ Standard Conditions (on reverse) and Special Conditions (listed as attachments starting on page 2) are applicable to this permit.

JUN 13 2006

EFFECTIVE DATE

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional Office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed Special Conditions as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Department of Natural Resources has established the Outreach and Assistance Center to help in completing future applications or fielding complaints about the permitting process. You are invited to contact them at 1-800-361-4827 or (573) 526-6627, or in writing addressed to Outreach and Assistance Center, P.O. Box 176, Jefferson City, MO 65102-0176.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention Construction Permit Unit.

2006-01-095

Johnson Controls Battery Group, Inc.

P.O. Box 591, Milwaukee, WI 53201-0591

Johnson Controls Battery Group, Inc.

4722 Pear Street, Saint Joseph, MO 64502

Buchanan County, S25, T57N, R35W

Construction of one (1) additional Chemset Curing Chamber and modification to the existing four (4) Chemset Curing Chambers. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Johnson Controls Battery Group, Inc.
Buchanan County, S25, T57N, R35W

1. Superseding Condition
   The conditions of this permit supersede Special Condition No. 1A and the portions of 1B that pertain to the Chemset Curing Chambers (Chemset), Stack Nos. 430, 433, 436, & 439, found in the previously issued construction permit (Permit Number 032003-030) from the Air Pollution Control Program.

2. Emission Limitation
   A. Johnson Controls Battery Group, Inc. shall emit less than 21 tons of particulate matter less than ten (10) microns in diameter (PM_{10}) in any consecutive 12 month period from the entire installation.

      (1) Johnson Controls Battery Group, Inc. shall maintain an accurate record of PM_{10} emitted into the atmosphere from the entire installation. A form developed with the approval of the Air Pollution Control Program shall be used for demonstrating compliance with Special Conditions 2(A). Johnson Controls Battery Group, Inc. shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

      (2) Johnson Controls Battery Group, Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 2(B) indicate that the source exceeds the limitation of Special Conditions Number 2(A).

   B. Johnson Controls Battery Group, Inc. shall verify that total lead emissions from the new Chemset (Stack No. 444) and the increase in lead emissions from the existing Chemsets (Stack Nos. 430, 433, 436, & 439) are less than 0.01 tons of lead in any consecutive 12-month. This emission rate shall be verified though compliance testing, as detailed in Special Conditions 3 and 4.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

3. Performance Testing

A. Johnson Controls Battery Group, Inc. shall conduct performance testing on the new and modified Chemsets (Stack No. 444, 430, 433, 436, & 439) sufficient to quantify the emission rates of PM_{10} from these sources. In addition, Johnson Controls Battery Group, Inc. shall conduct performance testing on the new and modified Chemsets sufficient to quantify the emission rates of lead from these sources as specified in Special Condition 2.B. This testing may be limited to conducting tests on a representative piece of equipment upon approval by the Director. In addition, an alternate method(s) of quantifying the emission rates of PM_{10} and/or lead from these sources may be used in place of the above testing requirement if requested by Johnson Controls Battery Group, Inc. and approved by the Director.

B. These tests shall be performed within sixty (60) days after achieving the maximum production rate of the equipment, but not later than 180 days after initial start-up for commercial operation.

C. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program thirty (30) days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.

D. Two (2) copies of a written report of the performance test results shall be submitted to the Director within thirty (30) days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one (1) sample run.

E. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW
Project Number: 2006-01-095
Installation ID Number: 021-0009
Permit Number:

Johnson Controls Battery Group, Inc.
4722 Pear Street,
Saint Joseph, MO 64502

Complete: February 1, 1006
Reviewed: March 1, 2006

Parent Company:
Johnson Controls Battery Group, Inc.
P.O. Box 591,
Milwaukee, WI 53201-0591

Buchanan County, S25, T57N, R35W

REVIEW SUMMARY

- Johnson Controls Battery Group, Inc. has applied for authority to construct one (1) additional Chemset Curing Chamber (Chemset) and modify its existing four (4) Chemsets.

- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are lead compounds.

- Subpart KK of the New Source Performance Standards (NSPS) applies to the lead-acid battery manufacturing plant.

- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.

- No air pollution control equipment is being used in association with the new and modified equipment.

- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of lead and PM_{10} are below de minimis levels.

- This installation is located in Buchanan County, an attainment area for all criteria air pollutants.

- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.

- Emissions testing is required for the equipment.

- A revision to your Basic Operating Permit application is required for this installation within 30 days of equipment startup.

- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Johnson Controls Battery Group, Inc. (JCBGI) manufactures lead-acid batteries for the motor vehicle after-market. The plant is located on 20 acres of land in the southeast portion of the City of St. Joseph. This installation is an existing minor source of lead compounds.

The following construction permits have been issued to Johnson Controls Battery Group, Inc. from the Air Pollution Control Program.

Permit Number	Description
0381-004	Replacement of four plate stackers on COS lines #2 through 5
0281-003	Installation of a central vacuum cleaner
1182-002	Installation of two OSI tunnel type drying ovens for lead paste
0185-004	Increase production by installing an additional lead-acid battery manufacturing line
0485-011	Installation of a second COS line
0788-006	Installation of a scrap lead plate salvage tumbler
0290-013	Installation of a Chem Set/Steam Chamber
1090-004	New pastemixer and strip caster to produce lead strip for casting
0492-012	Replacement of battery plate stackers on COS lines 2, 3, and 7 and upgrade COS operations and heat sealers on COS 2 and 3
1192-015	Replacement of the existing RADCO vacuum system and a Mark V COS line
0793-026	Increase production by modifying existing equipment
0194-009	Installation of three new JCI pasters and a JCI-II vacuum stacker
1294-010	Installation of a chemset chamber, two lead oxide storage tanks, two trim dry ovens, expanded metal plate making system #2, a lead cylinder caster and two lead oxide mills
0895-035	Installation of COS Line #9
0196-015	Installation of a lead cylinder caster, two Sovema lead oxide mills and a storage tank system
0796-014	Installation of a new pasting line, four new Sovema Mills, and one cylinder caster lead pot and caster units and the modification of chemset chambers #1, #2, and #3
1199-007	Installation of a single lead pot to support the existing five (5) cylinder casters
032003-030	Increase in production at the existing lead-acid battery manufacturing plant

PROJECT DESCRIPTION

Johnson Controls Battery Group, Inc. (JCBGI) currently operates four (4) Chemsets (Emission Points 420, 433, 436, and 439) to cure the pasted grids (plates) before being assembled into the battery cases. JCBGI is now seeking authority to install a fifth Chemset. The proposed unit will have a flowrate of 12,000 actual cubic feet per minute (acfm) with heat provided by one natural gas-fired burner rated at 3.0 MMBTU per hour. Products of combustion will be exhausted separately from the process stack. In addition to the new Chemset, JCBGI also plans to modify the existing four Chemsets in order to increase the production rate by 30%. The exhaust flow will increase from 6,000 acfm to 12,000 acfm by increasing the fan speed. Stack diameters will also be increased to accommodate the increased flow. As with the existing four Chemsets, the proposed fifth unit will emit uncontrolled due to extremely low emissions. The Maximum Hourly Design Rate (MHDR) is 7.15 tons of plates for each Chemset.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from performance tests conducted on the existing Chemsets. The testing was conducted in April of 2004 on all four existing Chemsets. The highest emission rate average of both particulate matter and lead were divided by the production rate to come up with the following emission factors: 0.00334 pounds of particulate matter per tons of plates and 4.2E-06 pounds of lead per ton of plates. Potential emissions of the application represent the potential of the new Chemset and the increase in emissions from the existing Chemsets, assuming continuous operation (8760 hours per year). Actual emissions were taken from the 2004 Emissions Inventory Questionnaire (EIQ). The following table provides an emissions summary for this project.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory *De Minimis* Levels	Existing Potential Emissions	Existing Actual Emissions (2004 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM_{10}	15.0	N/D	3.44	0.65	<21
SOx	40.0	N/D	0.03	0.01	N/A
NOx	40.0	N/D	5.27	1.25	N/A
VOC	40.0	N/D	0.41	0.07	N/A
CO	100.0	N/D	1.05	1.05	N/A
Lead	0.6	N/D	0.15	0.0003	N/A
HAPs	10.0/25.0	N/D	N/D	0.0003	N/A

N/A = Not Applicable; N/D = Not Determined

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM_{10} and lead are conditioned to below de minimis levels.

APPLICABLE REQUIREMENTS

Johnson Controls Battery Group, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information,* 10 CSR 10-6.110
  The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.

- *Operating Permits*, 10 CSR 10-6.065

- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170

- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220

- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Lead-Acid Battery Manufacturing Plants*, 40 CFR Part 60, Subpart KK

- *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating,* 10 CSR 10-3.060

AMBIENT AIR QUALITY IMPACT ANALYSIS

Because of a change in policy for determining Screen Modeling Action Levels (SMALs), the Air Pollution Control Program re-conducted modeling performed in Permit Number 032003-030 of the JCBGI facility to ensure that all National Ambient Air Quality Standards (NAAQS) and Risk Assessment Levels (RALs) for lead were being met. Using existing emission rates from testing performed on actual or representative pieces of equipment and the projected emission rates of the Chemsets, the modeling showed that JCBGI was in compliance with all lead and lead compound standards.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Susan Heckenkamp
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 24, 2006, received January 27, 2006, designating Johnson Controls Battery Group, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated February 23, 2006.

Attachment A – PM_{10} Compliance Worksheet

Johnson Controls Battery Group, Inc.
Buchanan County, S25, T57N, R35W
Project Number: 2002-08-115
Installation ID Number: 021-0009
Permit Number: _____

This sheet covers the period from _____ to _____.
(month, year) (month, year)

Copy as needed.

Month	Column 1	Column 2	Column 3	Column 4
	Monthly Amount of Product (Batteries) Note 1	Composite PM_{10} Emission Factor (lbs/batteries) Note 2	Monthly PM_{10} Emissions (Tons) Note 3	12-Month PM_{10} Emissions (Tons/Year) Note 4

Note 1: Amount of batteries processed during this month.
Note 2: Composite PM_{10} emission factor t (lb/batteries)
Note 3: Column 1 x Column 2 x 0.0005.
Note 4: Sum of last 12-months of Column 3*.

***A 12-Month Total PM_{10} emissions not in excess of 21 tons for Column 4 indicates compliance**

Mr. Frank Tubbs
Environmental Coordinator
Johnson Controls Battery Group, Inc.
4722 Pear Street
Saint Joseph, MO 64502

RE: New Source Review Permit - Project Number: 2006-01-095

Dear Mr. Tubbs:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions, your new source review permit application and with your revised operating permit is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact me at (573) 751-4817, or you may write to me at the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:sha

Enclosures

c: Kansas City Regional Office
PAMS File 2006-01-095
Permit Number: